

CLAIMS

What is claimed is:

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1. A safety syringe, comprising:

a syringe barrel including a barrel body with a front opening,
a rear opening, a front end wall and a rear end wall, wherein a
cross-sectional area of said front opening is smaller than a cross-
sectional area of said rear opening, a spacer portion is disposed
10 within said barrel body and is penetrated by said front opening ;

a flexible holder-supporting seat being disposed movably
within said syringe barrel and on said spacer portion, wherein said
flexible holder-supporting seat includes a central hole formed
15 therethrough ;

a needle unit including a needle holder and a needle
penetrating said needle holder, said needle unit is disposed movably
within said front end wall, said needle holder being sleeved by said
central hole of said flexible holder-supporting seat on said spacer
portion, wherein a rear opening is formed in said rear end of said
20 needle holder, said needle penetrates said needle holder and said
spacer portion and is projected from said front opening ;

a plunger including a front end with a front opening and an
inward flange, a rear end and a plunger body formed between said
front end and said rear end, a cross-sectional area of said front
opening being larger than an external diameter of said needle holder,
said plunger being disposed movably within said syringe barrel ;
25 and

a flexible sealing member sleeved by said inward flange to

seal said front opening of said plunger, said flexible sealing member combining with said needle unit after said plunger being pushed to be close to said flexible holder-supporting seat, and then said needle unit being released from said flexible holder-supporting seat due to
5 said plunger, wherein said flexible sealing member is propped by said needle holder, and then said flexible sealing member is released from said inward flange to be automatically retracted into said plunger body due to a pressure.

10 2. The safety syringe according to claim 1, wherein said needle holder includes an outward flange, an external diameter of said outward flange is larger than a diameter of said needle holder.

15 3. The safety syringe according to claim 2, wherein said flexible sealing member includes a sealing rear portion and a holder-retaining front portion, said an external diameter of said sealing rear portion is larger than an internal diameter of said inward flange, said holder-retaining front portion is extended from said sealing rear portion and includes a blind hole, an internal
20 diameter of said blind hole is smaller than said external diameter of said outward flange.

 4. The safety syringe according to claim 3, wherein said flexible sealing member includes a curved projection.

25 5. The safety syringe according to claim 1, further comprising a rubber sealing ring sleeved around said plunger, wherein an external diameter of said rubber sealing ring is larger than said internal diameter of said syringe barrel.

6. The safety syringe according to claim 3, further comprising a piston body disposed within said blind hole.

5 7. The safety syringe according to claim 4, wherein said sealing rear portion includes a hollow space.

8. The safety syringe according to claim 1, wherein said needle unit includes a crook.

10 9. The safety syringe according to claim 8, wherein said flexible sealing member includes a sealing rear portion and an opening formed within said sealing rear portion.

15 10. The safety syringe according to claim 1, further comprising a U-shaped flexible element fastened by said flexible holder-supporting seat and said needle holder.

20 11. The safety syringe according to claim 10, wherein said U-shaped flexible element includes a hole penetrated by said needle.

12. The safety syringe according to claim 11, wherein said flexible sealing member includes a sealing rear portion.

25 13. The safety syringe according to claim 3, wherein a side in a front end of said inward flange expands and does not contact with said holder-retaining front portion.

14. A safety syringe, comprising:

a syringe barrel including a barrel body with a front opening, a rear opening, a front end wall and a rear end wall, wherein a cross-sectional area of said front opening is smaller than a cross-sectional area of said rear opening ;

5 a flexible holder-supporting seat being disposed movably within said syringe barrel, wherein said flexible holder-supporting seat includes a central hole formed therethrough ;

a needle unit including a needle holder, a crook and a needle penetrating said needle holder, said crook being disposed on a rear
10 end of said needle holder, said needle unit is disposed movably within said front end wall, said needle holder being sleeved by said central hole of said flexible holder-supporting seat, wherein a rear opening is formed in said rear end of said needle holder, said needle is projected from said front opening ;

15 a plunger including a front end with a front opening and an inward flange, a rear end and a plunger body formed between said front end and said rear end, a cross-sectional area of said front opening being larger than an external diameter of said needle holder, said plunger being disposed movably within said syringe barrel ;

20 and

a flexible sealing member sleeved by said inward flange to seal said front opening of said plunger, said flexible sealing member including an opening formed within said flexible sealing member to combine with said needle unit by said crook after said plunger being
25 pushed to be close to said flexible holder-supporting seat, and then said needle unit being released from said flexible holder-supporting seat due to said plunger, wherein said flexible sealing member is propped by said needle holder, and then said flexible sealing member is released from said inward flange to be automatically

retracted into said plunger body due to a pressure.

15. The safety syringe according to claim 11, further comprising a rubber sealing ring sleeved around said plunger, wherein an external diameter of said rubber sealing ring is larger than said internal diameter of said syringe barrel.

16. A safety syringe, comprising:

a syringe barrel including a barrel body with a front opening and a rear opening, wherein a cross-sectional area of said front opening is smaller than a cross-sectional area of said rear opening ;

a flexible holder-supporting seat being disposed movably within said syringe barrel, wherein said flexible holder-supporting seat includes a central hole formed therethrough ;

a needle unit including a needle holder and a needle penetrating said needle holder, said needle unit is disposed movably within said syringe barrel, said needle holder being sleeved by said central hole of said flexible holder-supporting seat, wherein said needle is projected from said front opening ;

a U-shaped flexible element fastened by said flexible holder-supporting seat and said needle holder, wherein said U-shaped flexible element includes a hole penetrated by said needle ;

a plunger including a front end with a front opening and an inward flange, a rear end and a plunger body formed between said front end and said rear end, a cross-sectional area of said front opening being smaller than an external diameter of said U-shaped flexible element, said plunger being disposed movably within said syringe barrel ; and

a flexible sealing member sleeved by said inward flange to

seal said front opening of said plunger, said flexible sealing member including a sealing rear portion to combine with said needle unit by injecting said needle into said sealing rear portion after said plunger being pushed to be close to said flexible holder-supporting seat, and
5 then said needle unit being released from said flexible holder-supporting seat due to said plunger, wherein said flexible sealing member is propped by said needle holder, and then said flexible sealing member is released from said inward flange to be automatically retracted into said plunger body due to a pressure.

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17. The safety syringe according to claim 16, further comprising a rubber sealing ring sleeved around said plunger, wherein an external diameter of said rubber sealing ring is larger than said internal diameter of said syringe barrel.

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